

I. AMENDMENT

In the Drawings:

Please replace the attached figures labeled Replacement Sheet with the originally filed figures. These Replacement Sheets add no new matter to the figures.

II. REMARKS

Claims 1-15 and 17-21 are pending, and claim 17 is allowed. The Applicant's attorney has amended claims 1, 3, 6-9, 12, 14-15, 17-18, and 20, and has cancelled claim 16 without prejudice or disclaimer. But the amendments to claims 6 and 17 do not narrow these claims (the amendment to claim 17 corrects a grammatical error). In light of the following, all of the claims as amended are now in condition for allowance, and, therefore, the Applicant's attorney requests the Examiner to withdraw all of the outstanding rejections. **But if after considering this response the Examiner does not agree that all of the claims are allowable, the Applicant's attorney requests that the Examiner contact him to schedule a telephone interview to further the prosecution of the application.**

Amended Drawings

The Applicant's attorney has amended the drawings (attached) to correct typographical errors. But the amended drawings add no new matter to the patent application. Therefore, the Applicant's attorney requests that the Examiner accept the amendments to the drawings. The Applicant's attorney will submit new formal drawings shortly.

Rejection of Claims 1-6 and 8 Under 35 U.S.C. § 112 Second Paragraph

The Applicant's attorney has amended claims 1, 6, and 7 to overcome this rejection, and therefore, requests that the Examiner withdraw this rejection.

Rejection Of Claims 9-12, 15-16, And 18-21 Under 35 U.S.C. § 102(b) As Being Anticipated By U.S. Patent 4,931,750 To Gontowski

As discussed below, the Applicant's attorney disagrees with this rejection, and, therefore, requests the Examiner to withdraw it.

Claim 9

Claim 9 as amended recites a resistor coupled to a node of a capacitor and operable to discharge the capacitor during a discharge portion of an oscillating period, and a discharge switch coupled to the node of the capacitor and operable to discharge the capacitor during only a part of the discharge portion of the oscillating period.

For example, referring to FIGS. 6 and 7 of the patent application, an oscillator includes a resistor R1 coupled to a node TC of a capacitor C and operable to discharge C during a discharge portion Ts of an oscillating period T_{osc}. The oscillator also includes a discharge switch M6 coupled to the node TC of the capacitor C and operable to discharge the capacitor during only part of the discharge portion (the part of TS represented by the vertical line after the exponentially decaying part) of the oscillating period. Actually the part of TS represented by the vertical line has a non-zero duration because although when closed the switch M6 discharges the capacitor C quickly, it does not discharge C instantaneously.

In contrast, Gontowski does not disclose a resistor operable to discharge a capacitor during a discharge portion of an oscillating period, and a discharge switch operable to discharge the capacitor during only a part of the discharge portion of the oscillating period. Referring, e.g., to FIG. 1, Gontowski's resistor RN is operable to discharge a capacitor C during a discharge portion of an oscillating period. But referring to col. 3, lines 5-15, Gontowski's transistor N16 is always "on," and thus discharges C during the entire discharge portion of the oscillating period. That is, whenever RN discharges C, N16 also discharges C. Consequently, Gontowski's transistor N16 is inoperable to discharge C during only part of the discharge portion of the oscillating period.

Claims 10-13

These claims are patentable by virtue of their dependencies from claim 9.

Claim 15

Claim 15 as amended recites an integrated circuit including a current source operable to charge a capacitor with a charge current, and a terminal coupled to the current

source and operable to be coupled to an external resistor that is operable to set a value of the charge current without conducting the charge current.

For example, referring to FIG. 6 of the patent application, an integrated circuit includes a current source (the combination of OP3, M5, T7, T8) operable to charge a capacitor C with a charge current, and a terminal TR coupled to the current source and operable to be coupled to an external resistor R2 that is operable to set a value of the charge current without conducting the charge current. Specifically, OP3 causes the voltage at TR to equal V_8 regardless of the value of R2. Therefore, the current through M5 and T7 is equal to V_8/R_2 . A charge current, which is proportional to V_8/R_2 , flows through transistor T8, node A of switch S, and terminal TC to charge the capacitor C. But this charge current does not flow through R2; consequently, R2 is operable to set the value of the charge current without conducting the charge current.

In contrast, referring to FIG. 1 of Gontowski, although Gontowski's resistor RC limits the charging current from N14 to capacitor C, unlike the claimed resistor, RC conducts the charge current. Consequently, RC is inoperable to set the value of the charge current without conducting the charge current.

Claim 18

Claim 18 as amended recites discharging a capacitor through a resistor during a first part of a discharge portion of an oscillating period, and discharging the capacitor through a switch during a second part of the discharge portion of the oscillating period, the second part being different than the first part.

For example, referring to FIGS. 6-7 of the patent application, a resistor R1 discharges a capacitor C during a first part of a discharge portion TS (here the first part is the entire discharge portion TS), and a switch M6 discharges the capacitor during a second part of the discharge portion (here the second part is the end part of TS corresponding to the vertical line between V_9 and V_L), where the second part is different than the first part. That is, because the first part of the discharge portion is equal to TS and the second part of the discharge portion is equal to only part of TS, the second part is different than the first part.

In contrast, Gontowski does not disclose discharging a capacitor through a resistor during a first part of a discharge portion of an oscillating period, and discharging the capacitor through a switch during a second part of the discharge portion of the oscillating period, the second part being different than the first part. Referring, e.g., to FIG. 1, Gontowski's resistor RN is operable to discharge a capacitor C during a discharge portion of an oscillating period. But referring to col. 3, lines 5-15, Gontowski's transistor N16 is always "on," and thus also discharges C during the same discharge portion of the oscillating period. That is, whenever RN discharges C, N16 also discharges C. Consequently, Gontowski's transistor N16 is inoperable to discharge C during a part of the discharge portion that is different than the part of the discharge portion during which RN discharges C.

Claims 19-21

These claims are patentable by virtue of their dependencies from claim 18.

Rejection Of Claims 1-3 and 5-6 Under 35 U.S.C. § 102(b) As Being Anticipated By U.S. Patent 4,723,114 to D'Arrigo

As discussed below, the Applicant's attorney disagrees with this rejection, and, therefore, requests the Examiner to withdraw it.

Claim 1

Claim 1 as amended recites a resistor coupled to a capacitor and operable to discharge the capacitor during a first time period, and a switch coupled to the capacitor and operable to discharge the capacitor during a second time period that is different than the first time period.

For example, referring to FIGS. 6-7 of the patent application, a resistor R1 discharges a capacitor C during a first time period TS, and a switch M6 discharges the capacitor C during a second time period (here only the part of TS corresponding to the vertical line between V9 and VL) that is different than the first time period. That is, because

the second time period is equal to only part of TS, the second time period is different than the first time period.

In contrast, D'Arrigo does not disclose a resistor operable to discharge a capacitor during a first time period, and a switch operable to discharge the capacitor during a second time period that is different than the first time period. Referring, e.g., to FIG. 3, even if one considers the current source 142 to be a resistor, because the source 142 and the switch 136 are in series, then they discharge the capacitor 100 only when the switch 136 is closed. Consequently, the source 142 and switch 136 discharge the capacitor 100 during the same time period, not different time periods.

Claims 2-3 and 5-6

These claims are patentable by virtue of their dependencies from claim 1.

Rejection Of Claims 1, 3-6, 9-11, 13, 18-19, and 21 Under 35 U.S.C. § 102(e) As Being Anticipated By U.S. Patent 6,603,366 to Huang

As discussed below, the Applicant's attorney disagrees with this rejection, and, therefore, requests the Examiner to withdraw it.

Claim 1

Claim 1 as amended recites a resistor coupled to a capacitor and operable to discharge the capacitor during a first time period, and a switch coupled to the capacitor and operable to discharge the capacitor during a second time period that is different than the first time period.

For example, referring to FIGS. 6-7 of the patent application, a resistor R1 discharges a capacitor C during a first time period TS, and a switch M6 discharges the capacitor C during a second time period (here only the part of TS corresponding to the vertical line between V9 and VL) that is different than the first time period. That is, because the second time period is equal to only part of TS, the second time period is different than the first time period.

In contrast, referring to FIGs. 6-7, because Huang's switch 306 and resistors 312 are in series, they discharge the capacitor 114 only when the switch 306 is closed. Consequently, the switch 306 and resistors 312 discharge the capacitor 114 during the same time period, not different time periods.

Claims 3-6

These claims are patentable by virtue of their dependencies from claim 1.

Claim 9

Claim 9 as amended recites a resistor coupled to a node of a capacitor and operable to discharge the capacitor during a discharge portion of an oscillating period, and a discharge switch coupled to the node of the capacitor and operable to discharge the capacitor during only a part of the discharge portion of the oscillating period.

For example, referring to FIGS. 6 and 7 of the patent application, an oscillator includes a resistor R1 coupled to a node TC of a capacitor C and operable to discharge C during a discharge portion T_s of an oscillating period T_{osc} . The oscillator also includes a discharge switch M6 coupled to the node TC of the capacitor C and operable to discharge the capacitor during only part of the discharge portion (the part of T_s represented by the vertical line after the exponentially decaying part) of the oscillating period. Actually the part of T_s represented by the vertical line has a non-zero duration because although when closed the switch M6 discharges the capacitor C quickly, it does not discharge C instantaneously.

In contrast, referring, e.g., to FIGS. 6-7, because Huang's switch 306 and resistors 312 are in series, they discharge the capacitor 114 only when the switch 306 is closed. Consequently, because the switch 306 and resistors 312 discharge the capacitor 114 during a same discharge portion of an oscillating period, the switch 312 does not discharge the capacitor 114 during only part of a discharge portion during which the resistors 312 discharge the capacitor.

Claims 10-11 and 13

These claims are patentable by virtue of their dependencies from claim 9.

Claim 18

Claim 18 as amended recites discharging a capacitor through a resistor during a first part of a discharge portion of an oscillating period, and discharging the capacitor through a switch during a second part of the discharge portion of the oscillating period, the second part being different than the first part.

For example, referring to FIGS. 6-7 of the patent application, a resistor R1 discharges a capacitor C during a first part of a discharge portion TS (here the first part is the entire discharge portion TS), and a switch M6 discharges the capacitor during a second part of the discharge portion (here the second part is the end part of TS corresponding to the vertical line between V9 and VL), where the second part is different than the first part. That is, because the first part of the discharge portion is equal to TS and the second part of the discharge portion is equal to only part of TS, the second part is different than the first part.

In contrast, referring e.g., to FIGS. 6-7, because Huang's switch 306 and resistors 312 are in series, they discharge the capacitor 114 during the entire discharge portion of the oscillating period when the switch 306 is closed. Consequently, the switch 306 does not discharge the capacitor 114 during a different part of the discharge portion than the resistors 312 do.

Claims 19 and 21

These claims are patentable by virtue of their dependencies from claim 18.

Rejection Of Claims 1-3, 5-8, 18, and 21 Under 35 U.S.C. § 102(b) As Being Anticipated By FIG. 2 of the Patent Application

As discussed below, the Applicant's attorney disagrees with this rejection, and, therefore, requests the Examiner to withdraw it.

Claim 1

Claim 1 as amended recites a resistor coupled to a capacitor and operable to discharge the capacitor during a first time period, and a switch coupled to the capacitor and operable to discharge the capacitor during a second time period that is different than the first time period.

In contrast, because the switch S and the resistance of the capacitor CCF are in series, the switch S and CCF resistance do not discharge the capacitor CCF during different time periods.

Claims 2-3 and 5-8

These claims are patentable by virtue of their dependencies from claim 1.

Claim 18

Claim 18 as amended recites discharging a capacitor through a resistor during a first part of a discharge portion of an oscillating period, and discharging the capacitor through a switch during a second part of the discharge portion of the oscillating period, the second part being different than the first part.

In contrast, because the switch S and the resistance of the capacitor CCF are in series, the switch S and CCF resistance do not discharge the capacitor CCF during different parts of a discharge portion of an oscillating period.

Claims 18 and 21

These claims are patentable by virtue of their dependencies from claim 18.

Objection to Claim 14

The Applicants' attorney has rewritten claim 14 in independent form.

Conclusion

In light of the foregoing and in addition to allowed claim 17, claims 2, 4-5, 10-11, 13, 19, and 21 as previously pending and claims 1, 3, 6-9, 12, 14-15, 18, and 20 as amended are in condition for allowance, which is requested.

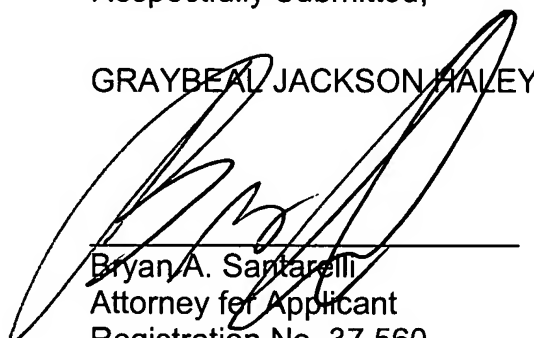
In the event additional fees are due as a result of this amendment, payment for those fees has been enclosed in the form of a check. Should further payment be required to cover such fees you are hereby authorized to charge such payment to Deposit Account No. 07-1897.

If the Examiner believes that a phone interview would be helpful, he is respectfully requested to contact the Applicant's attorney, Bryan Santarelli, at (425) 455-5575.

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Respectfully Submitted,

GRAYBEAL JACKSON HALEY LLP



Bryan A. Santarelli
Attorney for Applicant
Registration No. 37,560
155 – 108th Ave. NE, Suite 350
Bellevue, WA 98004-5973
(425) 455-5575